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LAMPRECHT, JOEL	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/537,891
Filing Date: June 07, 2005
Appellant(s): SUDOL ET AL.

Koninklijke Phillips Electronics N.V.
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 6/15/09 appealing from the Office action mailed 10/16/08.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,947,905	Hadjicostis	9-1999
6,049,958	Eberle et al	4-2000
7,022,080	Marian	4-2006

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-5, and 23-25 have been rejected under 35 U.S.C. 103(a) as being found unpatentable over **Hadjicostis et al (US 5,947,905)** in view of **Eberle et al (US 6,049,958).** Hadjicostis et al disclose an ultrasonic transducer with a housing (Fig 1-8), acoustic elements (Fig 7b, Col 5 Line 60 – Col 6 Line 10), an integrated circuit adjacent to the acoustic elements (Col 5 Line 60 – Col 6 Line 10), a first connection means and second connection means for connecting the acoustic elements to an integrated circuit and connection that integrated circuit to electrical transmission lines (Col 5 Line 60 – Col 6 Line 55), where the first connection means are comprised of metal bumps and solder bumps and the second connection means is comprised of one of wire-bonds, direct wire attachments and tab bonding of leads (Col 7 Line 1-65). Hadjicostis et al also disclose interconnection substrate for the second connection means comprising a thin film circuit (Col 7 Line 35-50) with ceramic and laminate portions (Col 7 Line 35-40), an intermediate interconnection substrate comprising a flexible circuit, and a semi-rigid circuit or a rigid circuit, a bent interconnection, so that the horizontal length is less than fifty percent of a horizontal length of the integrated circuit (Col 9 Line 10 – Col 10 Line 30). Hadjicostis et al disclose an ultrasonic transducer with a thermally coated body (Col 7 Line 1-40), flexible circuit with electronic components on one portion and acoustic components on another portion of the circuit contacting the body (Col 6 Line 50 – Col 7

Line 15, Col 8 Line 10 – 65), the acoustic assembly including acoustic elements and an integrated circuit coupled to the acoustic elements (Col 8 Line 10 – Col 9 Line 37), with two rows of wire-bonds along each pair of opposed edges (Col 6 Line 10 - 40). The flexible circuit having two planar potions on opposite sides of a body, connection means with two additional flexible circuits with connections for signal transmission lines, and a flap portion separated from the first planar portion and connections means with one additional flexible circuit having connections for signal transmission lines and conductive film or adhesive attaching the additional flexible circuit to the flap potion of the circuit (Col 5 Line 10- Col 6 Line 50).

Regarding claims 23-25 Hadjicostis et al disclose a transducer with a flexible circuit having connection sites (Col 5 Line 10-40), an acoustic assembly mounted on a flexible circuit and comprising an integrated circuit having connection sites and acoustic elements electrically coupled to an integrated circuit (Col 7 Line 5-54), electronic components for control of the acoustic assembly connected in a circuit defined in part by a flexible circuit (Col 8 Line 14 – Col 9 Line 10), two wire-bonds connecting the connection sites of the integrated circuit and the connection sites of the flexible circuit along each opposed edge.

Hadjicostis et al disclose the use of an integrated circuit and an acoustic stack connected to the integrated circuit with electrical connection lines on the same surface as the acoustic stack, but do not disclose the use of one common surface of the integrated surface for placement of both the acoustic elements and connection means as the connection means is placed on one end of the integrated circuit and the acoustic

elements are connected to that connection means. Attention is then directed to the secondary reference by Eberle et al in the same area of endeavor which discloses the use of an acoustic stack and connection elements on the same surface of an integrated circuit (Col 2 Line 65-Col 3 Line 20). It would have been obvious to one of ordinary skill in the art at the time of the invention to have included the arrangement of acoustic elements of Eberle et al with the ultrasound transducer assembly of Hadjicostis et al for the purpose of reducing resistance between connection lines and improving overall signal fidelity.

Claim 6-22 and 26-27 have been rejected under 35 U.S.C. 103(a) as being found unpatentable over **Hadjicostis et al** in view of **Eberle et al (US 6,049,958)** as applied to claim 5 above and in further view of **Marian Jr (US 7,022,080 B2).** Hadjicostis et al in view of Eberle et al substantially disclose the invention as listed above, but fail to disclose that a portion of the interconnection extends in a first direction along a communication means and then extends at least perpendicularly in a second direction along the connection means or that bends at least at a perpendicular angle to define some cavity which contains thermally conductive elements and defining a transmission line which connects signal lines to electric components and the acoustic assembly. Attention is directed to Marian Jr which describes the use of a flexible circuit having at least a perpendicular bend which in part creates a cavity around thermally conductive elements connected to the circuit which has both flexible and rigid portions (Figure 2, Col 3 Line 30-Col 4 Line 45, and Column 7 line 35-Column 8 Line 12). While designs are chosen for both aesthetic, machining, and functional properties and

therefore are never identical, the flexible circuit with a bendable element of Marian Jr would have been obvious to one of ordinary skill in the at the time of the invention for use in conjunction with the system of Hadjicostis et al and Eberle et al for the purpose of providing for a cost-efficient, connectively flexible transducer element which is able to electrically couple more elements more efficiently along the electronic pathway.

(10) Response to Argument

Appellant's arguments with respect to claims 1-27 have been considered but are not persuasive.

In response to Appellant's arguments levied against the art of record, that the references fail to show certain features of Appellant's invention, it is noted that the features upon which appellant relies upon in arguments pertaining to the claims are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification or dependent claims are not read into the independent claims. See *In re Van Geuns,* 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

With respect to Appellant's argument (I) corresponding to claims 1, 8 and 23, Examiner respectfully disagrees that the Everle reference does not disclose connection means for connecting acoustic elements to an integrated circuit and second connection means for connecting the integrated circuit to electrical transmission lines on a common surface of the integrated circuit. Appellant has mis-characterized the portions of the Eberle which disclose these elements. The flex circuit of Eberle contains transducer elements and integrated circuit chips, making the flex circuit of Eberle an "integrated

circuit" having a common surface upon which both sets of connection means as well as the transducer elements are positioned upon (Figure 1 and Col 5 Line 10-25). Integrated circuit chips are not independent "circuits" themselves, but rather comprise a portion of the integrated circuit formed on the flexible material. The fact that the IC chips and acoustic elements are positioned with some space between them does not preclude them from sharing the same "surface" of the integrated circuit (Element 2, Fig 1).

With respect to Appellant's argument (II) corresponding to claim 26, Examiner respectfully disagrees with Applicant's assessment of the wording of the claim as currently presented. Claim 26 recites the "arrangement of an acoustic assembly on a flexible circuit that extends along a first axis", and later recites, "bending the flexible circuit at least partially around a thermally-conductive body to form at least one 180 degree bend about the body with the acoustic assembly being spaced from the electronic components along a second axis that extends substantially perpendicular to the first axis and both the acoustic assembly and electronic components are positioned, with respect to each other, along the second axis". Examiner turns to Figure 2 of Marian which is recreated below for delineation: (Citations are added for reference in the figure)

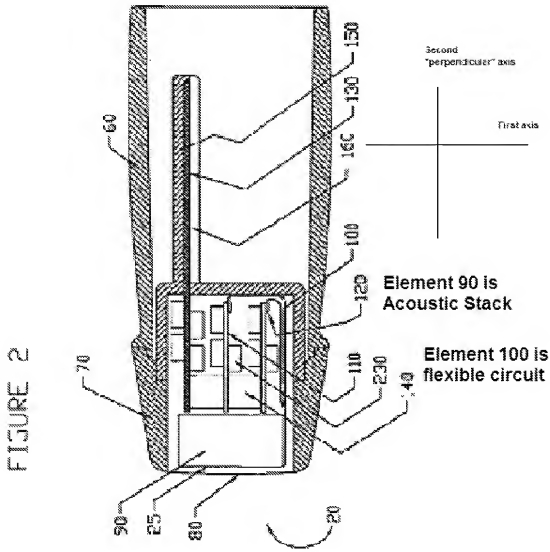

FIGURE 2

Element 100 of Figure 2 is the Flexible circuit, while element 90 is the acoustic stack or assembly. The flexible part of the circuit 100, makes a 180 degree bend and electronic components are arranged in parallel with the acoustic assembly along the "second axis", where as the first axis would be the portion of the flex circuit during the bend which is perpendicular to the second axis in 2d. It is not recited that the acoustic

assembly is on the first axis; in fact the opposite is claimed as at the end of claim 26 as it is recited "both the acoustic assembly and the electronic components are positioned along the second axis". Within the figure, both the acoustic assembly and the electronic components, though separated, are still along the same "second" axis.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/JOEL M LAMPRECHT/

Examiner, Art Unit 3737

Conferees:

/BRIAN CASLER/
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